User Guide

XTP Extenders

XTP SR HDMI

XTP HDMI Scaling Receiver

Extron Electronics
INTERFACING, SWITCHING AND CONTROL

68-2007-01 Rev. A
09 13

Safety Instructions

Safety Instructions • English

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ATTENTION: This symbol, ⚠, when used on the product, is intended to alert the user of important operating and maintenance (servicing) instructions in the literature provided with the equipment.

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Korean

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주의: 이 기호 ⚠, 가 제품에 사용될 경우, 장비와 함께 제공된 책자에 나와 있는 주요 운영 및 유지보수(정비) 지침을 경고합니다.

안전 가이드라인, 규제 준수, EMI/EMF 호환성, 접근성, 그리고 관련 항목에 대한 자세한 내용은 Extron 웹 사이트(**www.extron.co.kr**)의 Extron 안전 및 규제 준수 안내서, 68-290-01 조항을 참조하십시오. Conventions Used in this Guide

FCC Class A Notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. The Class A limits provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause interference; the user must correct the interference at his own expense.

ATTENTION: The Twisted Pair Extension technology works with unshielded twisted pair (UTP) or shielded twisted pair (STP) cables; but, to ensure FCC Class A and CE compliance, STP cables and STP Connectors are required.

For more information on safety guidelines, regulatory compliances, EMI/EMF compatibility, accessibility, and related topics, see the "**Extron Safety and Regulatory Compliance Guide**" on the Extron website.

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Conventions Used in this Guide

Notifications

The following notifications are used in this guide:

WARNING: A warning indicates a situation that has the potential to result in death or severe injury.

ATTENTION: Attention indicates a situation that may damage or destroy the product or associated equipment.

NOTE: A note draws attention to important information.

TIP: A tip provides a suggestion to make working with the application easier.

Software Commands

Commands are written in the fonts shown here:

```
^AR Merge Scene,,Op1 scene 1,1 ^B 51 ^W^C
[Ø1] R ØØØ4 ØØ3ØØ ØØ4ØØ ØØ8ØØ ØØ6ØØ [Ø2] 35 [17] [Ø3]
```

Esc X1 * X17 * X20 * X23 * X21 CE ←

NOTE: For commands and examples of computer or device responses mentioned in this guide, the character "Ø" is used for the number zero and "O" represents the capital letter "o."

Computer responses and directory paths that do not have variables are written in the font shown here:

```
Reply from 2Ø8.132.18Ø.48: bytes=32 times=2ms TTL=32
C:\Program Files\Extron
```

Variables are written in slanted form as shown here:

```
ping xxx.xxx.xxx.xxx –t
SOH R Data STX Command ETB ETX
```

Selectable items, such as menu names, menu options, buttons, tabs, and field names are written in the font shown here:

From the **File** menu, select **New**.

Click the **OK** button.

Specifications Availability

Product specification are available on the Extron website, **www.extron.com**.

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Introduction

This section contains general information about this guide and the Extron XTP SR HDMI scaling receiver. Topics in this section include:

- **About This Guide**
- **About the XTP SR HDMI Scaling Receiver**
- **Key Features**

About This Guide

This guide provides installation, operation, control, and reference information for the XTP SR HDMI scaling receiver. In this guide, the terms "scaling receiver" and "XTP SR HDMI" are used interchangeably to refer to the XTP SR HDMI scaling receiver.

About the XTP SR HDMI Scaling Receiver

The Extron XTP SR HDMI receives video, audio, bidirectional RS-232 and IR, and Ethernet signals over a single twisted pair cable. It is HDCP-compliant and supports 1080p/60 Deep Color, 1920x1200 signals, and embedded HD lossless audio formats. It works with Extron XTP devices in matrix, or point-to-point applications for signal distribution and long-distance transmission (up to 330 feet) between remote endpoints, using shielded or unshielded CATx cable.

It can be powered locally or remotely through an Extron XTP Power Injector or XTP matrix switcher.

The device can be controlled through the On-Screen Display (OSD) menu (see **On-Screen Display (OSD) Menu System** on page 12), Extron Simple Instruction Set (SIS) commands (see **SIS Configuration and Control** on page 20), or the XTP System Configuration Software (see **XTP System Configuration Software** on page 29).

The following diagram shows one way the XTP SR HDMI can be integrated in an XTP point-to-point application. The scaling receiver can also be used with an XTP matrix switcher (see the XTP matrix switcher user guide for more details on matrix applications).

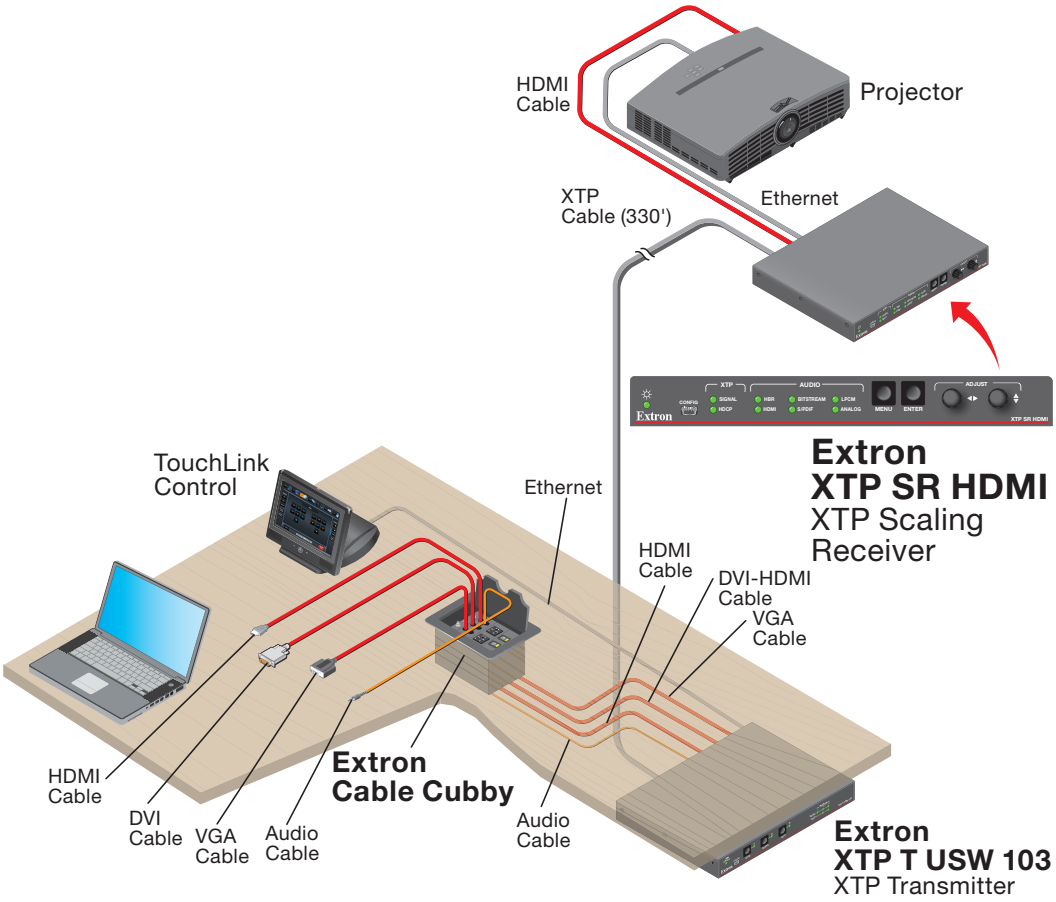


Figure 1. Typical XTP SR HDMI Point-to-point Application

Key Features

Reliable cable infrastructure — Transmits or receives video, audio, bidirectional RS-232 and IR, and Ethernet up to 330 feet (100 m) over a single CAT 5e, 6, or 7 type cable, providing high reliability and maximum performance on an economical and easily installed cable infrastructure.

1080p/60 Deep Color and 1920x1200 signals — Supports digital signal transmission up to 330 feet over a single twisted pair cable, maintaining superior image quality at the highest resolutions.

CAT 5e, 6, 6a, and 7 compatible — Optimized for use with common unshielded and shielded twisted pair cable types. XTP systems fully support a maximum transmission distance of 330 feet (100 m) for all compatible resolutions. Shielded twisted pair cable provides added protection from outside interference.

Bidirectional RS-232 and IR insertion — Allows a remote display to be controlled without the need for additional cabling through bidirectional RS-232 control and IR signals inserted into the XTP output.

HDMI specification features — Includes data rates up to 6.75 Gbps, Deep Color up to 12-bit, HD lossless audio formats, and CEC pass-through.

HDCP compliance — Ensures display of content-protected media and interoperability with other HDCP-compliant devices.

EDID Minder — Automatically manages EDID communication between connected devices. It ensures that all sources power up properly and reliably outputs content for display.

Key Minder — Authenticates and maintains continuous HDCP encryption between input and output devices to ensure quick and reliable switching in professional AV environments, while enabling simultaneous distribution of a single source signal to one or more displays.

Ethernet extension — Centralized 10/100Base-T Ethernet communication can be implemented via an Ethernet pass-through port to reduce the amount of independent network drops required within a system.

Remote power capability — To simplify integration, XTP transmitters and receivers can be powered by the XTP CrossPoint matrix switcher or XTP power injectors.

Multiple embedded audio formats — Compatible with a broad range of multi-channel audio signals, providing reliable operation with HDMI sources.

HDMI audio de-embedding with analog stereo and digital S/PDIF audio outputs — Digital HDMI audio is made available as a balanced or unbalanced analog stereo signal on captive screw connectors or a S/PDIF connector.

EDID and HDCP transmission — Supports DDC channels that are actively buffered, allowing continuous communication between source and display.

Contact closure device control — Enables control of room functions such as projector lifts, screen operations, and other environmental controls.

1080i deinterlacing — Provides high performance deinterlacing for 1080i signals from HD sources including cable or satellite set-top boxes, delivering optimized image quality.

Auto-Image — Automatically adjusts the sizing, centering, and filtering to optimize the output image. This can save time and effort in fine tuning displayed images.

Aspect ratio control — Controls the aspect ratio of the video output by selecting a FILL mode, which provides a full screen output, or a FOLLOW mode, which preserves the original aspect ratio of the input signal.

Image freeze control — Freezes a live image through RS-232 or USB control.

Internal test patterns — Helps calibrate and setup the output.

XTP integrated system products compatibility — Is compatible with all XTP integrated system products. XTP is a flexible, reliable signal switching and distribution system that provides a completely integrated solution for multiple digital and analog formats.

Front panel security lockout — Allows security lockout of front panel buttons.

UL 2043 plenum rated — Meets UL 2043 for smoke and heat release for installation within a plenum airspace above a drop ceiling - power supply excluded. Above-the-ceiling placement conceals the scaling receiver to prevent theft, and is convenient for installing equipment when space inside the room is limited.

Installation

This section contains installation procedures for the XTP SR HDMI and wiring details. Topics in this section include:

- **Cabling**
- **Connection and Wiring Details**

The XTP SR HDMI can be placed on a tabletop or mounted in a rack or under a desk (see **Mounting** on page 41).

Cabling

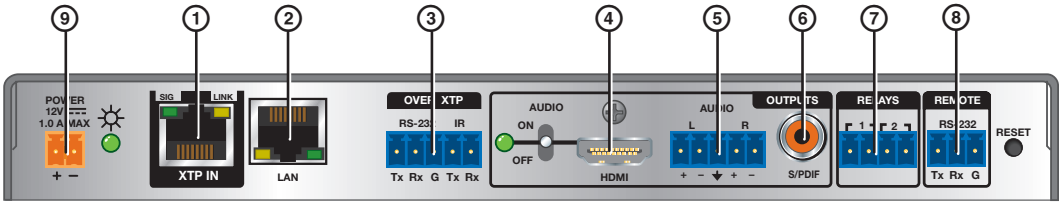


Figure 2. XTP SR HDMI Rear Panel Connectors

① **XTP Connector** — Connect a twisted pair cable to the RJ-45 connector labeled XTP In on the XTP SR HDMI and the XTP output port on another XTP device to pass all signals (see **TP Cable Termination and Recommendations** on page 7). This cable carries the following signals:

- Digital video
- Digital audio
- Bidirectional RS-232 and IR commands
- Remote power
- Ethernet communication
- System communication

Signal LED — Lights green when the XTP SR HDMI receives an active XTP input signal from a compatible transmitter or matrix switcher.

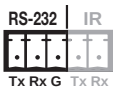
Link LED — Lights amber when a valid XTP link is established.

ATTENTION:

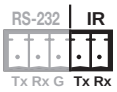
- Do not connect this connector to a computer data or telecommunications network.
- XTP remote power is intended for indoor use only. No part of the network that uses XTP remote power should be routed outdoors (see **Remote power** on page 10).

② **LAN connector** — Connect a control device or device to be controlled to the scaling receiver for 10/100Base-T Ethernet communication through this pass-through port. LEDs on the connector indicate link and activity status.

③ **RS-232 Over XTP port** — To pass bidirectional serial or other control signals between XTP-compatible devices, connect a control device to the 5-pole captive screw connector. The port includes only the 3 poles labeled "RS-232."



IR Over XTP port — To enable the ability to transmit and receive IR signals (up to 40 kHz), connect a control device to the 5-pole captive screw connector. This port includes only the 2 poles labeled "IR" and shares the ground pole with the RS-232 port.



NOTE: RS-232 and IR data can be transmitted simultaneously (see **RS-232 and IR Over XTP Communication** on page 8 for wiring details).

④ **HDMI output connector** — Connect a digital video display to the female HDMI connector (see **Rear Panel HDMI Audio Switch** on page 12 to mute or unmute embedded audio output). It can accept HDMI, DVI (with an appropriate adaptor), or DisplayPort video signals.

NOTES:
- The maximum cable length is 15 ft.
- Use Extron LockIt lacing brackets to secure HDMI connectors to the device (see **HDMI LockIt** on page 6).

⑤ **Analog audio output connector** — Connect a balanced or unbalanced, stereo or mono audio output device to the 3.5 mm, 5-pole captive screw connector for 2-channel stereo analog audio output (see figure 3 for wiring details).

NOTE: If the device is receiving 2-channel LPCM embedded on the HDMI input signal, it is extracted and converted to a stereo analog signal.

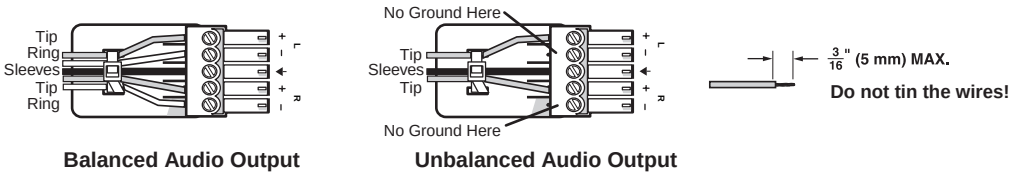


Figure 3. Audio Output Wiring

ATTENTION: For unbalanced audio, connect the sleeves to the center contact ground. Do not connect the sleeves to the negative (-) contacts.

⑥ **S/PDIF output connector** — Connect an audio device to the female orange RCA connector for digital S/PDIF audio output (see **Audio Output Overview** on page 12 for supported audio formats on the S/PDIF output). The type of audio present on this output is dictated by the following:

- The audio format selected on the source material or device.
- The source device automatically outputting an audio format through EDID.

⑦ **Relays** — Connect equipment that can be controlled via momentary or latching contact, such as projector screens or lifts, to the normally open relays.

ATTENTION: Do not exceed 24 V at 1.0 A for each port.

⑧ **Remote RS-232 connector** — Connect a host device to the 3.5 mm, 3-pole captive screw connector for serial control of the scaling receiver.

⑨ **Power connector** — Connect the external 12 V, 1.0 A power supply to the 2-pole captive screw connector. The Power LED lights to indicate the device is receiving power.

NOTE: The XTP SR HDMI can also be powered remotely (see **Power Connection** on page 9).

Connection and Wiring Details

HDMI LockIt

Use an Extron LockIt Lacing Bracket to secure an HDMI cable to each device as follows:

1. Plug the HDMI cable into the panel connection.

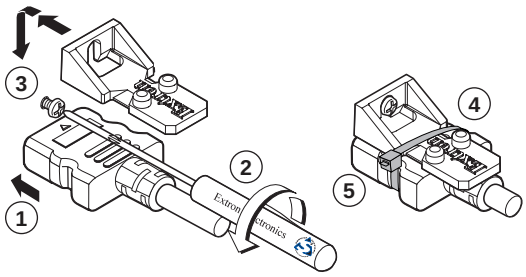


Figure 4. Installing the LockIt Lacing Bracket

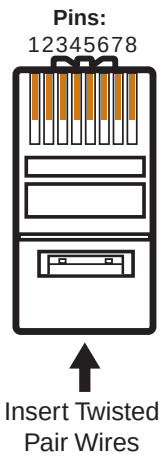
2. Loosen the HDMI connection mounting screw from the panel enough to allow the LockIt lacing bracket to be placed over it. The screw does not have to be removed.
3. Place the LockIt lacing bracket on the screw and against the HDMI connector, then tighten the screw to secure the bracket.

ATTENTION: Do not overtighten the HDMI connector mounting screw. The shield it fastens to is very thin and can easily be stripped.

4. Loosely place the included tie wrap around the HDMI connector and the LockIt lacing bracket as shown.
5. While holding the connector securely against the lacing bracket, use pliers or similar tools to tighten the tie wrap, then remove any excess length.

TP Cable Termination and Recommendations

Use the following pin configurations for twisted pair cables.



Straight-through Cable (for connection to a switch, hub, or router)			
TIA/EIA-T568A		**TIA/EIA-T568B**	
Pin	**Wire Color**	**Pin**	**Wire Color**
1	White-green	1	White-orange
2	Green	2	Orange
3	White-orange	3	White-green
4	Blue	4	Blue
5	White-blue	5	White-blue
6	Orange	6	Green
7	White-brown	7	White-brown
8	Brown	8	Brown

Figure 5. TP Cable Termination

Supported cables

The XTP SR HDMI is compatible with CAT 5e, 6, 6a, and 7 shielded twisted pair (F/UTP, SF/UTP, and S/FTP) and unshielded twisted pair (U/UTP) cable.

ATTENTION:

- Do not use Extron UTP23SF-4 Enhanced Skew-Free AV UTP cable or STP201 cable to link the XTP products.
- To ensure FCC Class A and CE compliance, STP cables and STP connectors are required.

Cable recommendations

Extron recommends using the following practices to achieve full transmission distances up to 330 feet (100 m) and reduce transmission errors.

- Use the following Extron XTP DTP 24 SF/UTP cables and connectors for the best performance:
  - **XTP DTP 24/1000** Non-Plenum 1000' (305 m) spool 22-236-03
  - **XTP DTP 24P/1000** Plenum 1000' (305 m) spool 22-235-03
  - **XTP DTP 24 Plug** Package of 10 101-005-02
- If not using XTP DTP 24 cable, at a minimum, Extron recommends 24 AWG, solid conductor, STP cable with a minimum bandwidth of 400 MHz.
- Terminate cables with shielded connectors to the TIA/EIA-T568B standard.
- Limit the use of more than two pass-through points, which may include patch points, punch down connectors, couplers, and power injectors. If these pass-through points are required, use CAT 6 or 6a shielded couplers and punch down connectors.

NOTE: When using CAT 5e or CAT 6 cable in bundles or conduits, consider the following:

- Do not exceed 40% fill capacity in conduits.
- Do not comb the cable for the first 20 m, where cables are straightened, aligned, and secured in tight bundles.
- Loosely place cables and limit the use of tie wraps or hook and loop fasteners.
- Separate twisted pair cables from AC power cables.

RS-232 and IR Over XTP Communication

The RS-232 and IR Over XTP connector is for pass-through transmission of serial signals, such as projector control signals, and infrared data. To pass bidirectional serial command signals between XTP-compatible devices, connect a control device to the three leftmost poles (Tx, Rx, and G) of the 5-pole captive screw connector. To transmit and receive IR signals, connect a control device to the three rightmost poles (G, Tx, and Rx). The ground (G) pole is shared.

NOTE: RS-232 and IR data can be transmitted or received simultaneously (see figure 6 below).

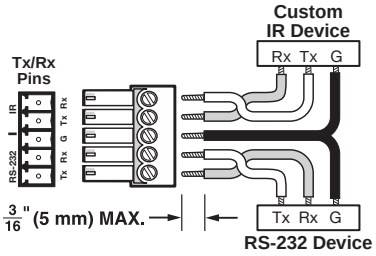


Figure 6. Wiring the RS-232 and IR Over XTP Connector

ATTENTION: The length of exposed wires is critical. The ideal length is 3/16 inch (5 mm).

- Longer bare wires can short together.
- Shorter wires are not as secure in the connectors and could be pulled out.

Power Connection

Apply power to the scaling receiver locally with the provided power supply or remotely with a power injector or a matrix switcher.

ATTENTION: XTP remote power is intended for indoor use only. No part of the network that uses XTP remote power should be routed outdoors.

Local power

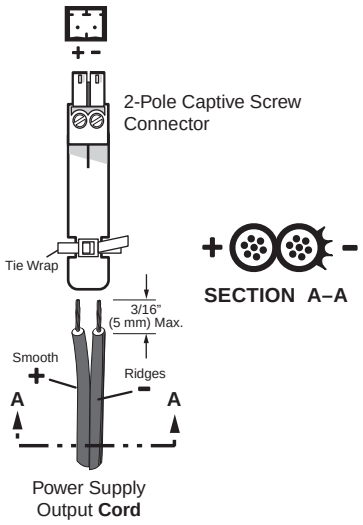


Figure 7. Power Wiring

The XTP SR HDMI can be connected to a local power supply (see figure 7 above).

WARNING: The two power cord wires must be kept separate while the power supply is plugged in. Remove power before wiring.

ATTENTION:

- This product is intended to be supplied by a Listed Power Unit marked “Class 2” or “LPS,” rated 12 VDC, 1.0 A minimum. Always use a power supply supplied by or specified by Extron. Use of an unauthorized power supply voids all regulatory compliance certification and may cause damage to the supply and the end product.
- Unless otherwise stated, the AC/DC adapters are not suitable for use in air handling spaces or in wall cavities. The installation must always be in accordance with the applicable provisions of National Electrical Code ANSI/NFPA 70, article 75 and the Canadian Electrical Code part 1, section 16. The power supply shall not be permanently fixed to a building structure or similar structure.
- Power supply voltage polarity is critical. Incorrect voltage polarity can damage the power supply and the unit. The ridges on the side of the cord identify the power cord negative lead.
- The length of the exposed (stripped) copper wires is important. The ideal length is 3/16 inch (5 mm).

TIP: Do not tin the stripped power supply leads. Tinned wires are not as secure in the captive screw connectors and could be pulled out.

Use the supplied tie wrap to strap the power cord to the extended tail of the connector.

Remote power

The XTP SR HDMI can be powered remotely through an XTP Power Injector or through an XTP matrix switcher.

ATTENTION: XTP remote power is intended for indoor use only. No part of the network that uses XTP remote power should be routed outdoors.

Power injector

To power the XTP SR HDMI remotely with an XTP Power Injector, power one device locally (see **Local power** on page 9) and connect an XTP Power Injector to the XTP cable run along the XTP ports (see the *XTP Power Injector User Guide* for more installation information).

NOTE: The power injector provides remote power up to 330 feet when using a CATx cable with 24 AWG wire.

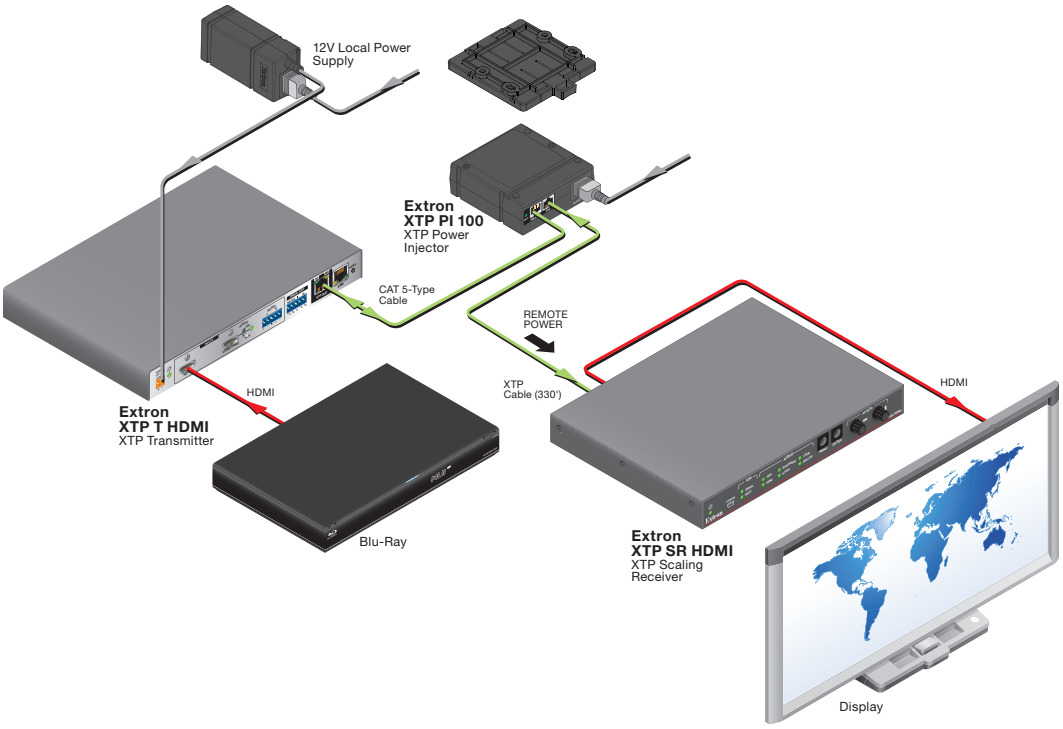


Figure 8. Typical Point-to-Point Application with Remote Power

Direct power from XTP core products

XTP matrix switchers have a fixed amount of power available to provide remote power to connected XTP endpoints (see to the user guide of the XTP matrix switcher for more information). To manage available power from the XTP matrix switcher, use the XTP System Configuration Software with the matrix switcher.

Operation

This section contains information for front panel operation and configuration of the XTP SR HDMI and configuration through the On-Screen Display (OSD) menu. Topics in this section include:

- **Front Panel Features and Indicators**
- **Rear Panel HDMI Audio Switch**
- **Audio Output Overview**
- **On-Screen Display (OSD) Menu System**
- **Front Panel Lockout Mode (Executive Mode)**

Front Panel Features and Indicators

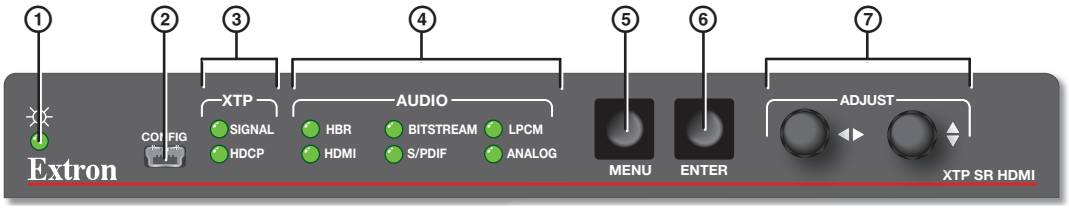


Figure 9. XTP SR HDMI Front Panel

① **Power LED indicators** — Lights when power is applied to the unit. There are two Power LED indicators, one on the front panel and one on the left side of the rear panel.

② **Config port** — Connect a host device to the front panel mini USB B Config port.

③ **XTP indicators**

Signal LED indicator — Lights when an active XTP input signal is received.

HDCP LED indicator — Lights when the received input signal is encrypted.

④ **Audio indicators**

HBR LED indicator — Lights when the audio input is high bit rate audio.

Bitstream LED indicator — Lights when the embedded audio signal format is a Dolby® Digital, DTS, or 2-Ch Dolby.

LPCM LED indicator — Lights when the embedded audio signal is LPCM-2Ch.

HDMI LED indicator — Lights when the audio input signal is multi-channel, LCPM-2Ch, or HiDef audio.

S/PDIF LED indicator — Lights when the input audio format is multi-channel or LPCM.

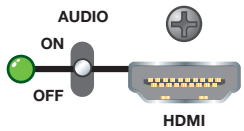
Analog LED indicator — Lights when the received audio format is LPCM.

⑤ **Menu button** — Press this button to navigate the OSD menu or enable or disable front panel lockout mode (see **Front Panel Lockout Mode (Executive Mode)** on page 19).

⑥ **Enter button** — Press this button to navigate the OSD menu or enable or disable front panel lockout mode (see **Front Panel Lockout Mode (Executive Mode)** on page 19).

⑦ **Adjustment knobs** — Rotate the horizontal (◄►) or vertical (▲▼) adjustment knob to navigate the on-screen display menu or adjust submenu items.

Rear Panel HDMI Audio Switch



The XTP SR HDMI has an HDMI audio switch that mutes or unmutes the embedded audio on the HDMI output connector. The LED next to the switch lights when HDMI audio is enabled.

Move and hold the rear panel HDMI audio switch up for about 1 second to enable embedded audio on the associated HDMI connector, or move and hold the HDMI audio switch down for about 1 second to disable embedded audio on the associated HDMI connector. The switch returns to the middle position after it has been released so the device can continue to be controlled through SIS commands or from an XTP matrix switcher.

Audio Output Overview

By default, an XTP transmitter or matrix switcher prioritizes embedded digital audio over analog audio. Use SIS commands (see **SIS Configuration and Control** on page 20) or the XTP System Configuration Software (see **XTP System Configuration Software** on page 29) to manually select the audio input.

	Audio Output LEDs		
Audio Input Format	**HDMI**	**S/PDIF**	**Analog**
LPCM	X	X	X
Multi-channel PCM	X		
Dolby Digital 2/0	X	X	
Dolby Digital 2/0 Surround	X	X	
Dolby Digital 5.1	X	X	
Dolby Digital EX	X	X	
Dolby Digital Plus	X		
Dolby TrueHD	X		
DTS 2-channel	X	X	
DTS Digital Surround 5.1	X	X	
DTS-ES Matrix 6.1	X	X	
DTS-ES Discrete 6.1	X	X	
DTS-HD	X		
DTS-HD Master Audio	X		

On-Screen Display (OSD) Menu System

XTP SR HDMI configuration and adjustments can be performed by using SIS commands (see **SIS Configuration and Control** on page 20), the XTP System Configuration Software (see **XTP System Configuration Software** on page 29), or by using the front panel controls and the OSD menu. The OSD menu is used primarily when the receiver is first set up.

NOTE: The OSD menu has a fixed time-out of 10 seconds.

Menu Navigation Using Front Panel Controls

Menu button — Press the Menu button to activate the OSD menu or close submenus items.

Enter button — Press the Enter button to select submenu items or accept changes to settings.

Adjustment knobs — Rotate the Horizontal Adjustment (◄►) knob or Vertical Adjustment (▲▼) knob to navigate submenus and submenu items and adjust settings.

Menu Overview

The OSD menu contains six submenus with various submenu items for adjusting settings or viewing device information. Use the Menu, Enter, and adjustment knobs to navigate the OSD menu.

To open the OSD menu:

1. Connect a display device to the HDMI output connector.
2. Press the Menu button to open the OSD menu.

To navigate the OSD menu:

1. After opening the OSD menu, rotate the adjustment knobs to navigate the six submenus. The following table shows the six submenus and their respective submenu items.

Submenus	Submenu Items				
Auto-Image	Auto-Image				
Picture Controls	Horizontal/ vertical position	Horizontal/vertical size	Brightness/ contrast	Detail	
User Presets	Recall	Save			
Input Configuration	Total pixels	Horizontal/vertical active pixels			
Output Configuration	Resolution	Color space	Color bit depth	HDMI data	
Advanced Configuration	Test pattern	Blank	Freeze	Aspect ratio	System reset

2. Press the Enter button to open the selected submenu.
3. Rotate the adjustment knobs to navigate the submenu items.
4. Press the Enter button to adjust a submenu item or press the Menu button to return to the list of submenus.

To adjust a submenu item:

1. Navigate to an adjustable submenu item and press the Enter button to select the submenu item.
2. As required, rotate the adjustment knobs or press the Enter button to adjust the submenu item.
3. Press the Enter button to accept the new value. Press the Menu button to cancel any pending changes.

To exit the OSD menu:

While in the list of submenus, press the Menu button to exit the OSD menu.

Auto-Image Submenu

The Auto-Image submenu allows the execution of a one-time Auto-Image.

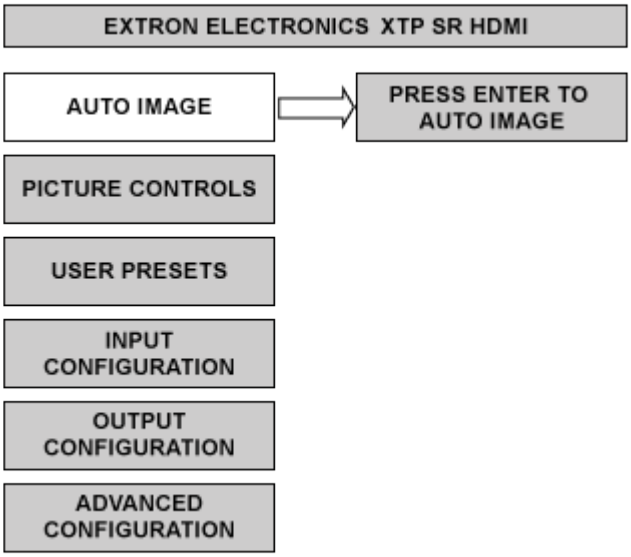


Figure 10. Auto-Image Submenu

Auto-Image — Press the Enter button to execute a one-time Auto-Image. This Auto-Image automatically resizes and centers the input to fill the output screen.

Picture Controls Submenu

The Picture Controls submenu allows the adjustment of picture settings.

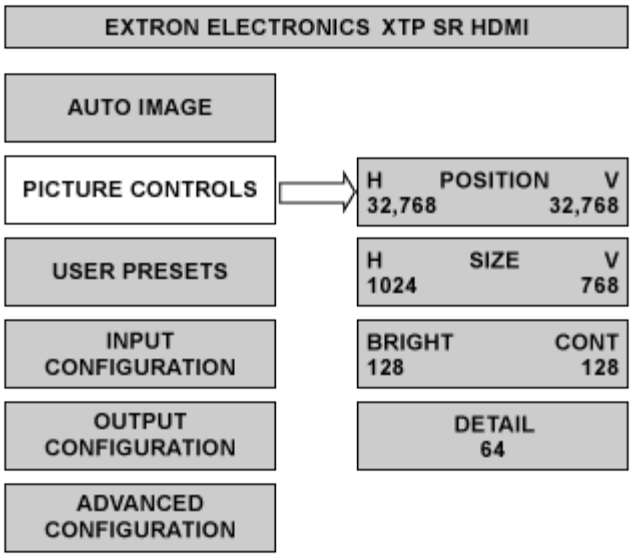


Figure 11. Picture Controls Submenu

Image position — Rotate the Horizontal Adjustment knob to adjust the horizontal (H) position of the image. Rotate the Vertical Adjustment knob to adjust the vertical (V) position of the image.

Image size — Rotate the Horizontal Adjustment knob to adjust the horizontal (H) size of the image. Rotate the Vertical Adjustment knob to adjust the vertical (V) size of the image.

Brightness and contrast — Rotate the Horizontal Adjustment knob to adjust the brightness (Bright) of the image. Rotate the Vertical Adjustment knob to adjust the contrast (Cont) of the image.

Detail — Rotate the adjustment knobs to adjust the detail of the image.

User Presets Submenu

The User Presets submenu saves the current picture control settings for the selected input. User presets can be saved and recalled later on another input, allowing them to also be used as aspect ratio or discrete size and center shortcuts. There are 8 user presets available per input.

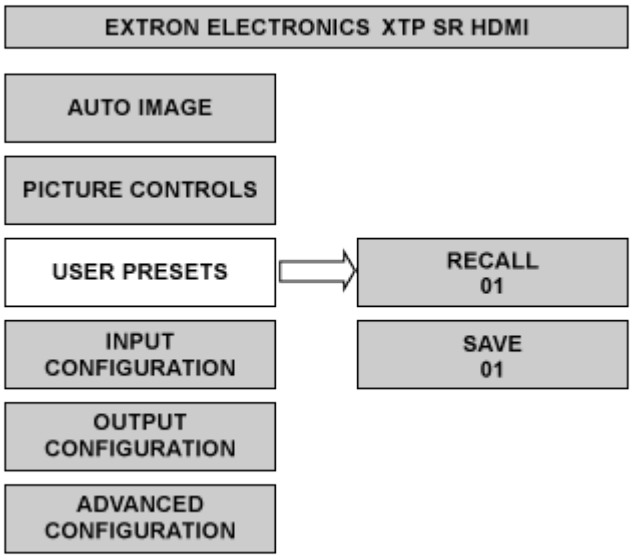


Figure 12. User Presets Submenu

User presets save the following settings:

- Brightness and contrast
- Detail
- Image size and position

Recall — Rotate the adjustment knobs to select a preset to recall saved picture control settings.

Save — Rotate the adjustment knobs to select a preset to store the current picture control settings.

Input Configuration Submenu

The Input Configuration submenu displays the total pixels and horizontal and vertical active pixels of the input signal.

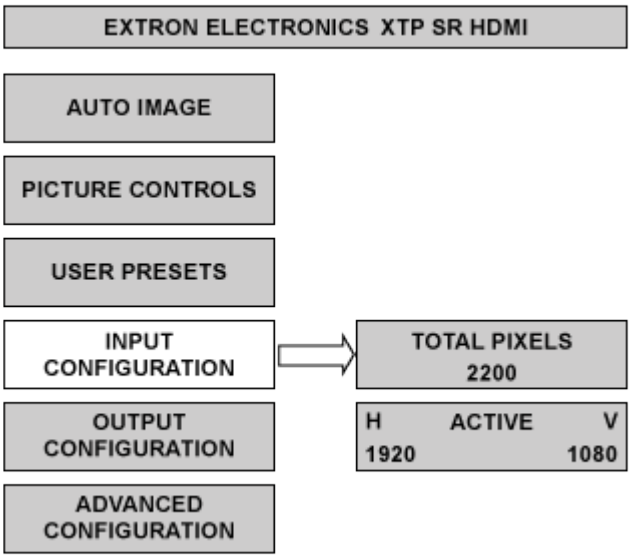


Figure 13. **Input Configuration Submenu**

Total pixels — Displays the total pixels of the input signal. This is not configurable.

Active — Displays the active horizontal (H) pixels and vertical (V) lines of the input signal. These are not configurable.

Output Configuration Submenu

The Output Configuration submenu is used to configure of the output resolution and refresh rate. Color space, color bit depth, and HDMI data settings are set to `Auto` and not configurable.

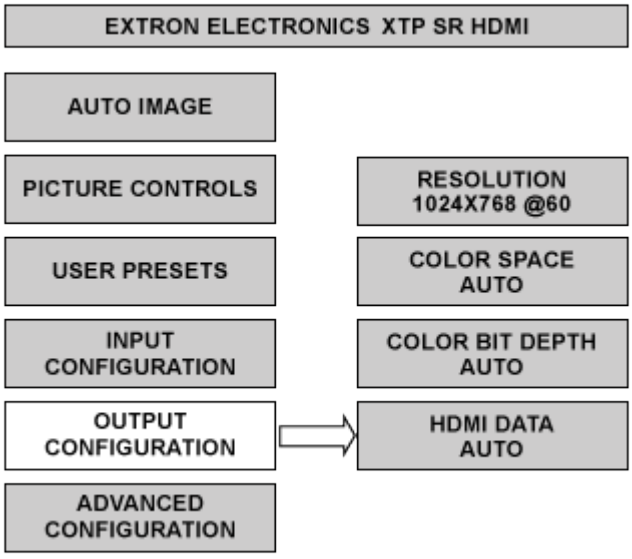


Figure 14. **Output Configuration Submenu**

Resolution — Rotate the adjustment knobs to select a new resolution and refresh rate. The following table shows the available resolution and refresh rates. The resolution and refresh rate can also be changed with SIS commands (see the **Output scaler rate SIS commands** on page 25).

Resolution	23.98 Hz	24 Hz	25 Hz	29.97 Hz	30 Hz	50 Hz	59.94 Hz	60 Hz	75 Hz
640x480						X		X	X
800x600						X		X	X
852x480						X		X	X
1024x768						X		X	X
1024x852						X		X	X
1024x1024						X		X	X
1280x768						X		X	X
1280x800						X		X	X
1280x1024						X		X	X
1360x765						X		X	X
1360x768						X		X	X
1365x768						X		X	X
1366x768						X		X	X
1365x1024						X		X	X
1440x900						X		X	X
1400x1050						X		X	
1680x1050						X		X	
1600x1200						X		X	
1920x1200						X		X	
480p							X	X	
576p						X			
720p			X	X	X	X	X	X*	
1080i						X	X	X	
1080p	X	X	X	X	X	X	X	X	
2K (2048x1080)	X	X	X	X	X	X	X	X	

* Default

Color space — Sets the color space. This is not configurable.

Color bit depth — Sets the color bit depth of the input signal. This is not configurable.

HDMI data— Reads the EDID of the display and determines if the output is capable of receiving ancillary data. This is not configurable.

Advanced Configuration Submenu

The Advanced Configuration submenu is used to set test patterns, screen blanking and freezing, aspect ratio, and system reset.

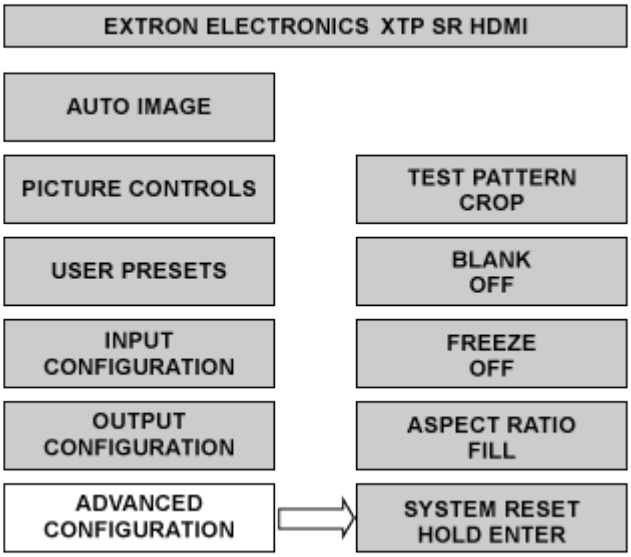


Figure 15. Advanced Configuration Submenu

Test pattern — Rotate the adjustment knobs to select a test pattern. The available test patterns are Crop, Alternating Pixels, 4x4 Crosshatch, Color Bars, and Grayscale. The default setting is Off.

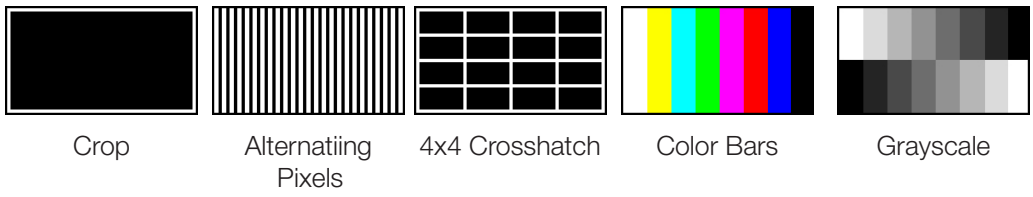


Figure 16. Test Pattern Examples

NOTE: All test patterns include a single pixel border.

Blank — Rotate the adjustment knobs to turn the blank screen feature on or off. When on, the screen turns black, but the OSD menu is still available.

Freeze — Rotate the adjustment knobs to freeze or unfreeze the output.

Aspect ratio — Rotate the adjustment knobs to set the output aspect ratio to Fill or Follow. When the aspect ratio is set to Fill, the output is sized and centered to fill the entire output screen. When the aspect ratio is set to Follow, the native aspect ratio of the input is maintained.

Factory reset — Press and hold the Enter button to reset the device to factory defaults. The scaler retains the current firmware version.

Front Panel Lockout Mode (Executive Mode)

Executive mode locks all front panel controls (RS-232 and USB control are still available). To enable or disable executive mode through the front panel, press and hold the Menu and Enter buttons simultaneously for about 2 seconds or until the Power LED blinks (see **Executive mode SIS commands** on page 27 or **XTP System Configuration Software** on page 29 for remote enabling or disabling of executive mode).

SIS Configuration and Control

The XTP SR HDMI can be configured and controlled using the OSD menu (see **On-Screen Display (OSD) Menu System** on page 12), Extron Simple Instruction Set (SIS) commands, or the XTP System Configuration Software (see **XTP System Configuration Software** on page 29). This section contains SIS communication details and SIS commands and responses when connected directly to an XTP SR HDMI. Topics in this section include:

- **Host Device Connection**
- **SIS Programming Guide**
- **Command and Response Tables for SIS Commands**

Host Device Connection

Use a computer running the Extron DataViewer utility or HyperTerminal, or use a control system to make serial control of the receiver possible. To connect directly to an XTP SR HDMI, connect the computer to the XTP SR HDMI through the front panel USB Config port (see ② on page 11) or the rear panel Remote RS-232 connector (see ⑧ on page 4).

SIS Programming Guide

Host-to-Device and Device-to-Host Communication

SIS commands consist of one or more characters per field. No special characters are required to begin or end a command sequence. When the XTP SR HDMI determines that a command is valid, it executes the command and sends a response to the host device. All responses from the receiver to the host end with a carriage return and a line feed (CR/LF = ↵), which signals the end of the response character string. A string is one or more characters.

Error Responses

When the XTP SR HDMI receives an SIS command and determines that it is valid, it performs the command and sends the corresponding response to the host device. If the command is determined invalid or contains invalid parameters, the receiver returns an error response to the host. The error response codes are:

E1Ø = Invalid command
E11 = Invalid preset number
E13 = Invalid parameter
E14 = Not valid for this configuration
E17 = Invalid command for signal type
E22 = Busy

Using Command and Response Tables for SIS Commands

The command and response tables begin on page 23. Figure 17 shows the hexadecimal equivalent of ASCII characters used in the command and response tables.

NOTE: Uppercase and lowercase text can be used interchangeably unless otherwise stated.

Space →

ASCII to Hex Conversion Table										Esc	1B	CR	ØD	LF	ØA
	2Ø	!	21	"	22	#	23	$	24	%	25	&	26	'	27
(	28	)	29	*	2A	+	2B	,	2C	-	2D	.	2E	/	2F
Ø	3Ø	1	31	2	32	3	33	4	34	5	35	6	36	7	37
8	38	9	39	:	3A	;	3B	<	3C	=	3D	>	3E	?	3F
@	4Ø	A	41	B	42	C	43	D	44	E	45	F	46	G	47
H	48	I	49	J	4A	K	4B	L	4C	M	4D	N	4E	O	4F
P	5Ø	Q	51	R	52	S	53	T	54	U	55	V	56	W	57
X	58	Y	59	Z	5A	[	5B	\	5C	]	5D	^	5E	_	5F
`	6Ø	a	61	b	62	c	63	d	64	e	65	f	66	g	67
h	68	i	69	j	6A	k	6B	l	6C	m	6D	n	6E	o	6F
p	7Ø	q	71	r	72	s	73	t	74	u	75	v	76	w	77
x	78	y	79	z	7A	{	7B	l	7C	}	7D	~	7E	DEL	7F

Figure 17. ASCII to Hexadecimal Conversion

Symbol definitions

↵ = Carriage return with line feed

← or ¦ = Carriage return (no line feed)

• = Space character

Esc or W = Escape key

X31 = Output scaler rate and refresh rate

SIS Variables for EDID Resolution and Refresh Rate Combinations (where X31 = 10-90)									
Resolution	**23.98 Hz**	**24 Hz**	**25 Hz**	**29.97 Hz**	**30 Hz**	**50 Hz**	**59.94 Hz**	**60 Hz**	**75 Hz**
640x480						10		11	12
800x600						13		14	15
852x480						16		17	18
1024x768						19		20	21
1024x852						22		23	24
1024x1024						25		26	27
1280x768						28		29	30
1280x800						31		32	33
1280x1024						34		35	36
1360x765						37		38	39
1360x768						40		41	42
1365x768						43		44	45
1366x768						46		47	48
1365x1024						49		50	51
1440x900						52		53	54
1400x1050						55		56	
1680x1050						57		58	
1600x1200						59		60	
1920x1200						61		62	
480p							63	64	
576p						65			
720p			66	67	68	69	70	71*	
1080i						72	73	74	
1080p	75	76	77	78	79	80	81	82	
2048x1080	83	84	85	86	87	88	89	90	

* = default

Command and Response Tables for SIS Commands

Command	ASCII Command (host to XTP)	Response (XTP to host)	Additional Description
General Configurations			
Auto-Image			
Execute	A	Img↵	Execute a one time Auto-Image.
Picture Adjustments			
Video Mute			
Mute video and sync	2B	Vmt2↵	Mutes video and sync.
Mute video	1B	Vmt1↵	Mute the selected input.
Unmute video	ØB	VmtØ↵	Display the selected input.
View mute status	B	Vmt[X6]↵	View mute status.
Contrast			
Set contrast	[Esc][X7]CONT←	Cont[X7]↵	Set the contrast to [X7].
Increase contrast	[Esc]+CONT←	Cont[X7]↵	Increase the contrast level.
Decrease contrast	[Esc]-CONT←	Cont[X7]↵	Decrease the contrast level.
View contrast level	[Esc]CONT←	Cont[X7]↵	View the contrast level.

NOTES:

[X6] = Video mute
Ø = unmute (default); 1 = mute video; 2 = mute video and sync

[X7] = Picture adjustment
Ø to 255 (128 = default)

Command	ASCII Command (host to XTP)	Response (XTP to host)	Additional Description
Brightness			
Set brightness	Esc X7 BRIT ←	Brit X7 ↵	Set brightness level to X7.
Increase brightness	Esc +BRIT ←	Brit X7 ↵	Increase brightness level.
Decrease brightness	Esc -BRIT ←	Brit X7 ↵	Decrease brightness level.
View brightness	Esc BRIT ←	Brit X7 ↵	View the brightness level.
Detail filter			
Set detail level	Esc X7 HDET ←	Hdet X7 ↵	Set the detail level to X7.
Increase detail level	Esc +HDET ←	Hdet X7 ↵	Increase the detail level.
Decrease detail level	Esc -HDET ←	Hdet X7 ↵	Decrease the detail level.
View detail level	Esc HDET ←	Hdet X7 ↵	View the detail level.
Horizontal shift			
Set horizontal shift	Esc X8 HCTR ←	Hctr X8 ↵	Set horizontal position to X8.
Increase horizontal shift	Esc +HCTR ←	Hctr X8 ↵	Shift the image right.
Decrease horizontal shift	Esc -HCTR ←	Hctr X8 ↵	Shift the image left.
View horizontal shift	Esc HCTR ←	Hctr X8 ↵	View the horizontal position.
Vertical shift			
Set vertical shift	Esc X9 VCTR ←	Vctr X9 ↵	Set vertical position to X9.
Increase vertical shift	Esc +VCTR ←	Vctr X9 ↵	Shift the image down.
Decrease vertical shift	Esc -VCTR ←	Vctr X9 ↵	Shift the image up.
View vertical shift	Esc VCTR ←	Vctr X9 ↵	View the vertical position.
Horizontal size			
Set horizontal size	Esc X8 HSIZ ←	Hsiz X8 ↵	Set image width to X8.
Increase horizontal size	Esc +HSIZ ←	Hsiz X8 ↵	Increase the image width.
Decrease horizontal size	Esc -HSIZ ←	Hsiz X8 ↵	Decrease the image width.
View horizontal size	Esc HSIZ ←	Hsiz X8 ↵	View the image width.
Vertical size			
Set vertical size	Esc X9 VSIZ ←	Vsiz X9 ↵	Set image height to X9.
Increase vertical size	Esc +VSIZ ←	Vsiz X9 ↵	Increase the image height.
Decrease vertical size	Esc -VSIZ ←	Vsiz X9 ↵	Decrease the image height.
View vertical size	Esc VSIZ ←	Vsiz X9 ↵	View the image height.

NOTES:

X7 = Picture adjustment
Ø to 255 (128 = default)

X8 = Horizontal position or size
Ø to 65535 (32768 = default)

X9 = Vertical position or size
Ø to 65535 (32768 = default)

Command	ASCII Command (host to XTP)	Response (XTP to host)	Additional Description
Output Configurations			
Output scaler rate			
Set output rate	Esc X31 RATE ↵	Rate X31 ↵	Select output resolution and refresh rate.
View output rate	Esc RATE ↵	Rate X31 ↵	Show selected output rate.
Test pattern			
NOTE: See figure **16** on page 19 for examples of the available test patterns.			
Set pattern	X11 J	Tst X11 ↵	Set the test pattern to X11.
View test pattern	J	Tst X11 ↵	View the current test pattern.
Freeze			
Enable	1F	Frz1 ↵	Freeze the selected input.
Disable	ØF	FrzØ ↵	Unfreeze the selected input.
View freeze status	F	Frz X1 ↵	View the freeze status.

NOTES:

X1 = Enable or disable
Ø = disabled or off; 1 = enabled or on

X11 = Test pattern
Ø = off (default); 1 = crop; 2 = alternating pixels; 3 = crosshatch; 4 = colorbars; 5 = greyscale

X31 = Output scaler rate and refresh rate
See **Output scaler rate and refresh rate** on page 22 for a table of available resolutions and refresh rates.

Command	ASCII Command (host to XTP)	Response (XTP to host)	Additional Description
Audio Configurations			
Audio mute			
Mute all	3Z	Amt3↵	Mute all audio outputs.
Mute analog audio	2Z	Amt2↵	Mute the analog audio output.
Mute HDMI audio	1Z	Amt1↵	Mute the HDMI audio output.
Unmute all	ØZ	AmtØ↵	Unmute all audio outputs.
View mute status	Z	Amt X16 ↵	View the audio mute status.
Volume			
Set volume	X17 V	Vol X17 ↵	Set output volume to X17.
Increase volume level	+V	Vol X17 ↵	Increase the audio volume.
Decrease volume level	-V	Vol X17 ↵	Decrease audio volume.
View volume level	V	Vol X17 ↵	View current volume setting.
Presets			
User presets			
Recall preset	X18.	Rpr X18 ↵	Recall user preset X18.
Save preset	X18,	Spr X18 ↵	Save the current settings to user preset X18.

NOTES:

X16 = Audio mute
Ø = unmute; 1 = HDMI; 2 = analog; 3 = all

X17 = Volume
Ø to 64 (64 = default)

X18 = User preset
1 to 8

Command	ASCII Command (host to XTP)	Response (XTP to host)	Additional Description
Advanced Configuration			
Executive mode			
Enable executive mode	1X	Exe1↵	Lock the entire front panel.
Disable executive mode	ØX	Exe2↵	Unlock the front panel.
View executive mode status	X	Exe[X1]↵	View the executive mode status.
Relay control			
Pulse relay	[X20]*3*[X21]0	Rly[X20]*[X1]↵	Pulse relay [X20].
Toggle relay	[X20]*20	Rly[X20]*[X1]↵	Toggle relay [X20].
Turn relay on	[X20]*10	Rly[X20]*1↵	Turn relay [X20] on.
Turn relay off	[X20]*Ø0	Rly[X20]*Ø↵	Turn relay [X20] off.
View relay status	[X20]0	Rly[X20]*[X1]↵	View relay status.

NOTES:

[X1] = Enable or disable
Ø = disabled or off; 1 = enabled or on

[X20] = Relay
1 = relay 1; 2 = relay 2

[X21] = Pulse time
1 to 65535 (in 16 ms steps)

Command	ASCII Command (XTP to host)	Response (host to XTP)	Additional Description
Input aspect ratio			
Set aspect ratio to Fill	Esc 1ASPR←	Aspr1↵	Fill the entire output raster.
Set aspect ratio to Follow	Esc 2ASPR←	Aspr2↵	Use the native aspect ratio of the input.
View aspect ratio setting	Esc ASPR←	Aspr X23 ↵	View the current aspect ratio setting.
HDCP status			
View HDMI output status	Esc 0HDCP←	Hdcp0 X25 ↵	Query the HDCP status of the output.
Reset			
Reset to factory default	Esc ZXXX←	Zpx↵	Clear all user settings.
Information Requests			
View input signal status	0LS	Frq X30 ↵	View the input signal status.
View firmware version	Q	x.xx↵	View the firmware version.
View firmware build	*Q	x.xx.xxxx↵	View the firmware build version.
View part number	N	60-1199-01↵	View the device part number.

NOTES:

X23 = Input aspect ratio
1 = fill (default); 2 = follow

X25 = HDCP status
0, 2, 4, 6 = no sink or source device detected; 1, 3, 5 = sink or source detected with no HDCP encryption
7 = sink or source detected with HDCP encryption

X30 = Input signal status
0 = no input; 1 = input detected

XTP System Configuration Software

The XTP System Configuration Software is convenient, user-friendly control software used for configuring an XTP system or individual XTP devices. This section contains installation and configuration procedures for the XTP System Configuration Software. The XTP SR HDMI can also be controlled with the OSD menu (see **On-Screen Display (OSD) Menu System** on page 12) or SIS commands (see **SIS Configuration and Control** on page 20). Topics in this section include:

- **Installing the XTP System Configuration Software**
- **Using the XTP System Configuration Software**

Installing the XTP System Configuration Software

The program is contained on the Extron Software DVD or available for download on the Extron website, **www.extron.com**.

To install the software from the DVD:

1. Insert the DVD into the DVD drive of a computer running Microsoft® Windows®. The Extron software DVD window should appear automatically. If it does not self-start, run Launch.exe from the DVD.
2. Click the **Software** tab, scroll to the desired program, and click **Install**.
3. Follow the instructions that appear on the screen. By default, the installation creates an Extron directory in the Program Files folder, and places four icons into a group folder named “Extron Electronics\XTP System Configuration.”

To download the software from the website:

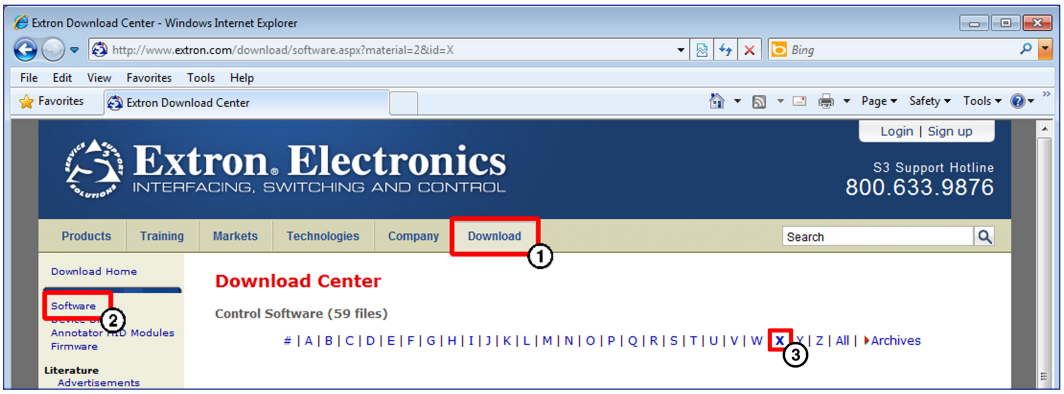


Figure 18. Extron Website Download Page

1. On the Extron website, click the **Download** tab.
2. From the left sidebar, click the **Software** link.
3. Navigate to XTP System Configuration.

4. Click the **Download** link to the right of the desired device.
5. Submit any required information to start the download. Note where the file is saved.
6. Open the executable (.exe) file from the save location.
7. Follow the instructions that appear on the screen. By default, the installation creates a directory in the Program Files folder, and places four icons into a group folder named "Extron Electronics\XTP System Configuration."

Using the XTP System Configuration Software

The XTP SR HDMI can be controlled directly from the front panel Config port or remotely from a connected XTP matrix switcher.

Connections

When opening the XTP System Configuration Software, the Connections screen opens first. This screen is used to establish communication with an XTP device via USB (see **Config Port** on page 11).

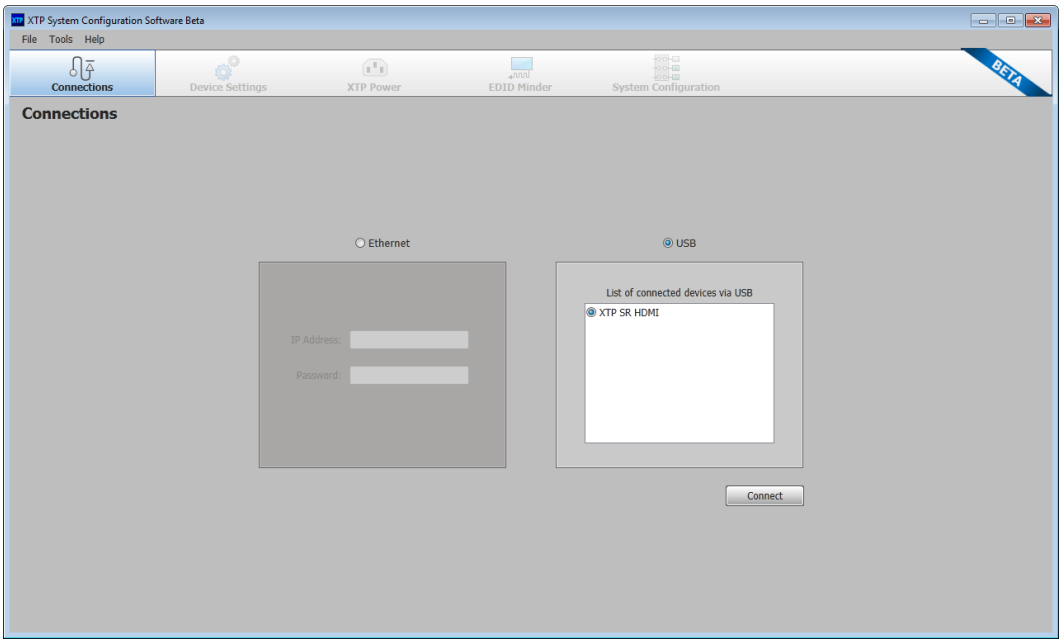


Figure 19. Connections Screen

1. From the Connections screen, select the **USB** radio button.
2. Select the connected device to be controlled from the displayed list.
3. Click the **Connect** button. The Device Settings screen opens.

Top Menu

The top menu contains three menus for configuring software settings.

File menu

The **File** menu contains options for disconnecting and exiting the program. To access the menu, click the **File** menu.

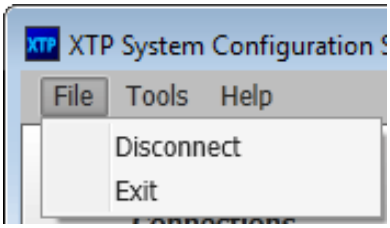


Figure 20. File Menu

Disconnect

This option disconnects the XTP System Configuration Software from the connected device.

From the **File** menu, select **Disconnect**. The Connections screen opens.

NOTE: If the device is already disconnected, the **Disconnect** option is disabled until a device is connected.

Exit

This option disconnects the receiver from the software and closes the application.

From the **File** menu, select **Exit**. The application closes.

Tools menu

The **Tools** menu contains an option for updating firmware. To access this menu, click the **Tools** menu.

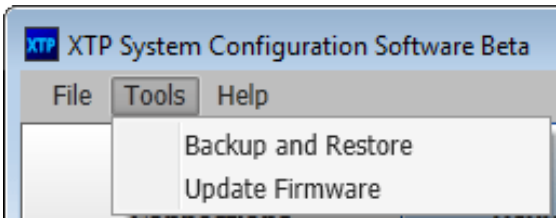


Figure 21. Tools Menu

Update Firmware

This option uploads firmware from the host device to the connected device.

NOTE: If necessary, download new firmware from the Extron website (see **Downloading Firmware** on page 44).

1. From the **Tools** menu, select **Update Firmware**. A dialog box opens to ask permission to disconnect from the device.

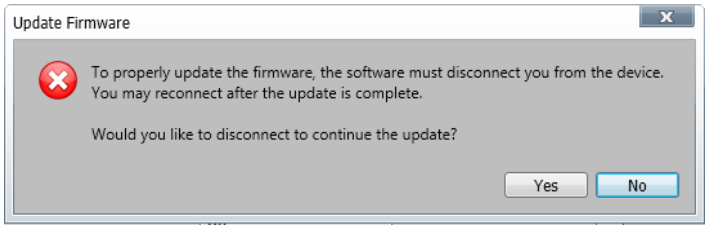

Update Firmware
To properly update the firmware, the software must disconnect you from the device.
You may reconnect after the update is complete.
Would you like to disconnect to continue the update?
Yes
No

Figure 22. Confirm Disconnect Dialog Box

2. Click the **Yes** button to disconnect from the device and continue with the firmware update process. The Update Firmware dialog box opens.

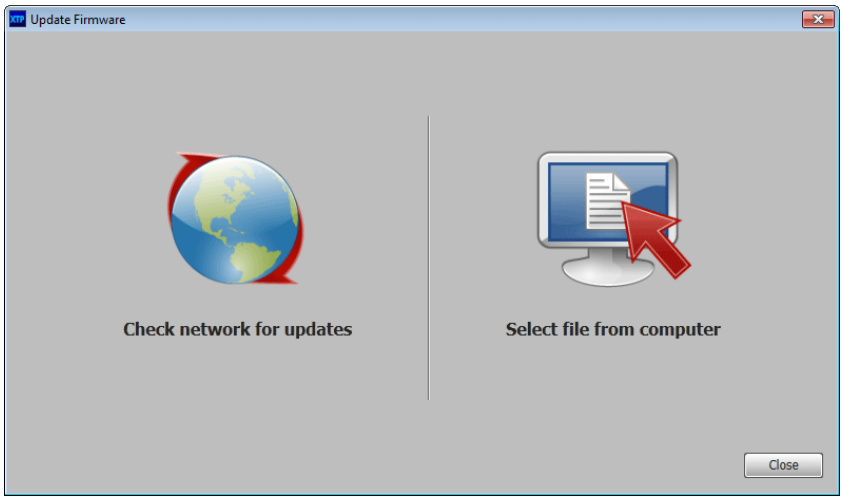


Figure 23. Update Firmware Dialog Box

3. Click the **Check network for updates** icon to search the LAN or WAN for firmware files or click the **Select file from computer** icon to select a firmware file from the connected host device.
4. Select the desired firmware file and click the **Close** button after the firmware finishes updating.

Help menu

The **Help** menu contains XTP System Configuration Software information, the help file, and a link to the Extron website.

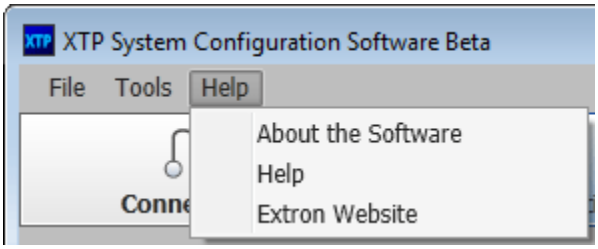


Figure 24. Help Menu

About the Software

This option provides basic information about the XTP System Configuration Software, including version number and copyright information.

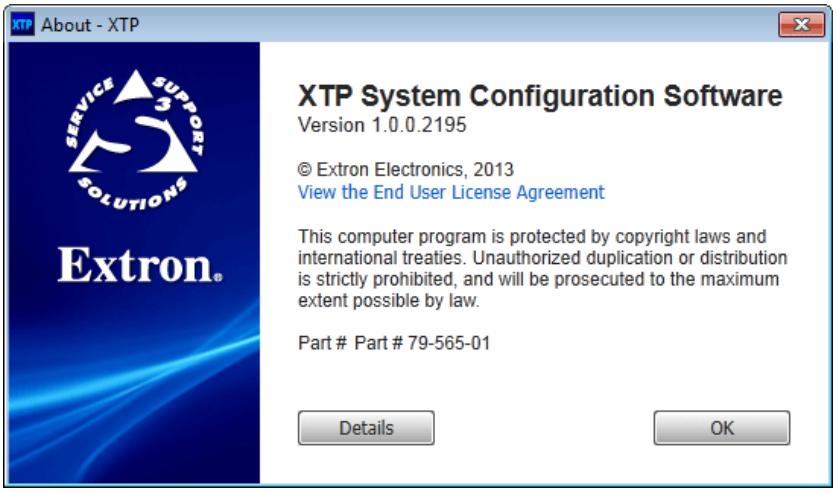

About - XTP
XTP System Configuration Software
Version 1.0.0.2195
© Extron Electronics, 2013
View the End User License Agreement
This computer program is protected by copyright laws and international treaties. Unauthorized duplication or distribution is strictly prohibited, and will be prosecuted to the maximum extent possible by law.
Part # Part # 79-565-01
Details
OK

Figure 25. About Dialog Box

1. From the **Help** menu, select **About the Software**. The About - XTP dialog box opens.
2. Click the **Details** button for more information.
3. Click the **Ok** button to close the dialog box.

Help

This option opens the XTP System Configuration Software help file in a web browser.

From the **Help** menu, select **Help**.

Extron Website

This option opens the Extron website in a web browser.

From the **Help** menu, select **Extron Website**.

Device Settings

The Device Settings screen allows a user to view and edit various device settings for the receiver directly connected to the host device. Click the **Device Settings** icon on the Global Navigation Bar to open the Device Settings screen.

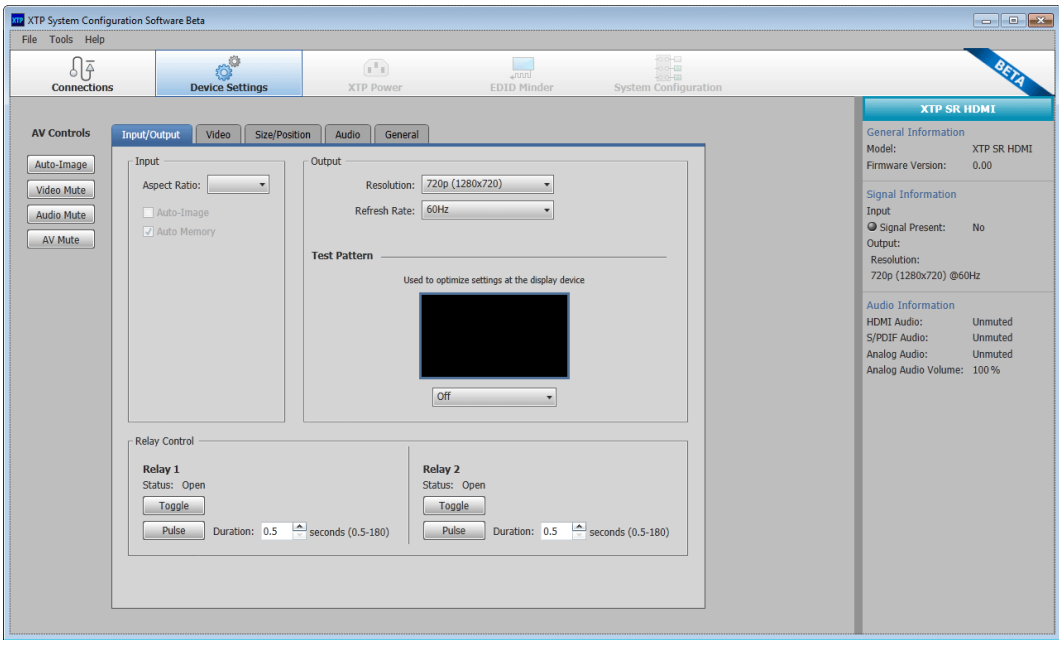
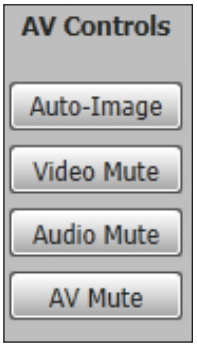


Figure 26. Device Settings Screen

AV Controls panel



The AV Controls panel, located on the left, is used to execute a one-time auto image on the input or perform audio or video mutes.

Auto-Image — Click the **Auto-Image** button to execute a one-time auto image on the input.

Video mute — Click the **Video Mute** button to mute or unmute the video output.

Audio mute — Click the **Audio Mute** button to mute or unmute the audio output.

Audio and video mute — Click the **AV Mute** button to mute or unmute audio and video output.

NOTE: The mute buttons turn red when they are enabled.

Input/Output tab

Click the **Input/Output** tab to open the Input/Output screen. This screen contains input and output configurations as well as relay controls.

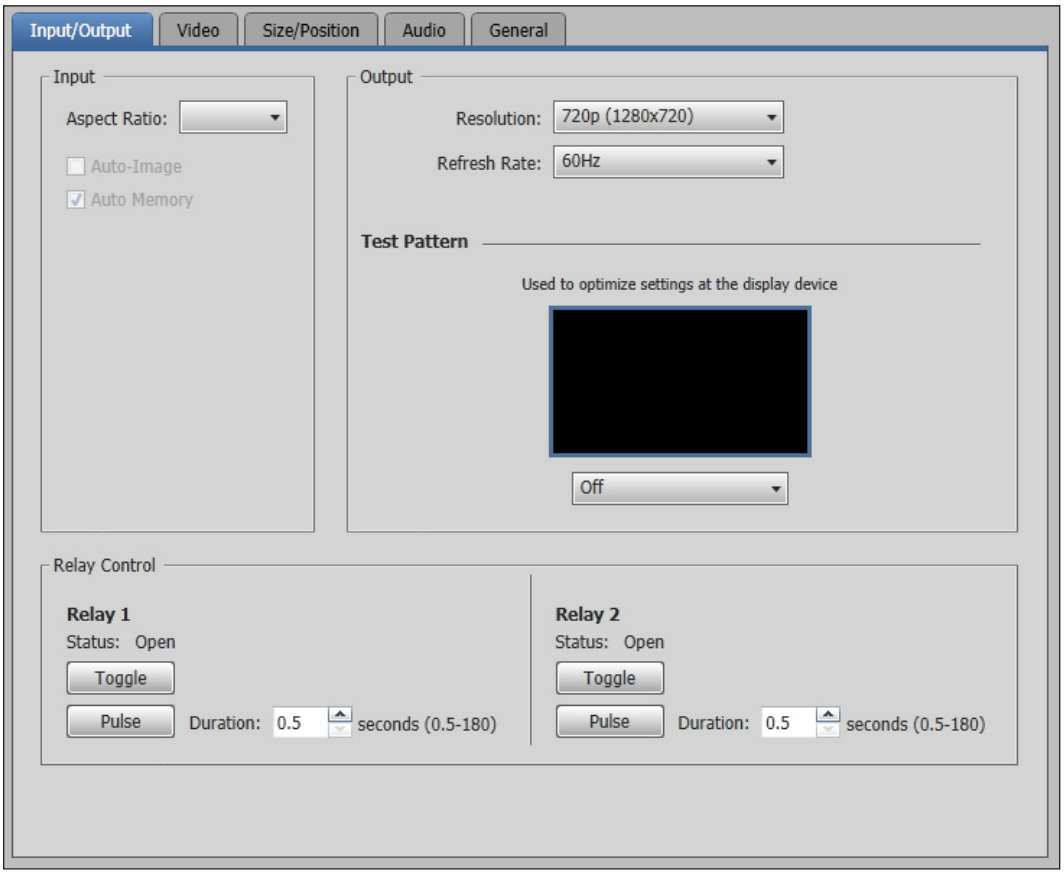


Figure 27. Input/Output Tab

Input panel

The Input panel is used to set the aspect ratio.

Aspect ratio — From the **Aspect Ratio** drop-down list, select **Fill** or **Follow**.

- **Fill** — Scales the input signal to fill the entire video output.
- **Follow** — Maintains the signal aspect ratio, with respect to the current output resolution.

Output panel

The Output panel is used to set the resolution, refresh rate, and test pattern.

Resolution — From the **Resolution** drop-down list, select the desired resolution.

Refresh rate — From the **Refresh Rate** drop-down list, select the desired refresh rate.

Test pattern —From the drop-down list below the test pattern preview, select the desired test pattern (see figure **16** on page 19 for examples of the available test patterns).

Relay Control panel

The Relay Control panel is used to toggle or pulse relay 1 or 2.

Status — Displays whether the relay is open or closed.

Toggle — Click the **Toggle** button in the desired relay panel to toggle either relay open or closed.

Pulse — In the desired relay panel, select a length of time from the **Duration** field. Click the **Pulse** button to pulse the relay for the time specified in the **Duration** field.

Video tab

Click the **Video** tab to open the Video screen. This screen contains picture control settings and user preset management options.

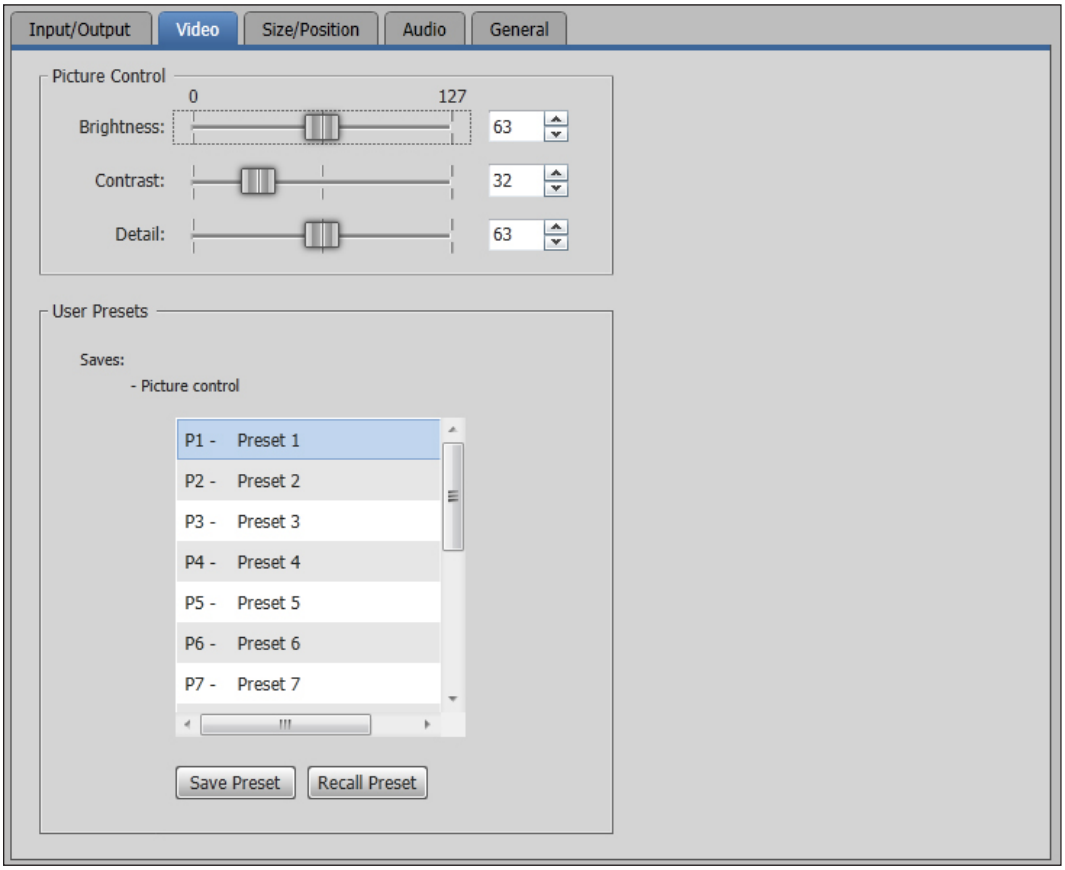


Figure 28. Video Tab

Picture Control panel

The Picture Control panel is used to adjust brightness, contrast, and detail settings. Adjust picture control settings in one of the following ways:

- Click and drag the handle of the slider for the desired setting.
- Click in the desired field to the right of the slider and enter a new value.
- Click the **Up** and **Down** arrows to the right of the desired setting.

Brightness — Adjust the brightness level of the output.

Contrast — Adjust the contrast level of the output.

Detail — Adjust the detail level of the output.

User presets panel

User presets save picture control settings that can be recalled later.

Save preset — Select a preset from the list of presets and click the **Save Preset** button.

Recall preset — Select the desired preset from the list of presets and click the **Recall Preset** button.

Size and Position tab

Click the **Size/Position** tab to open the Size and Position screen. This screen contains several different ways to adjust the size and position of the output.

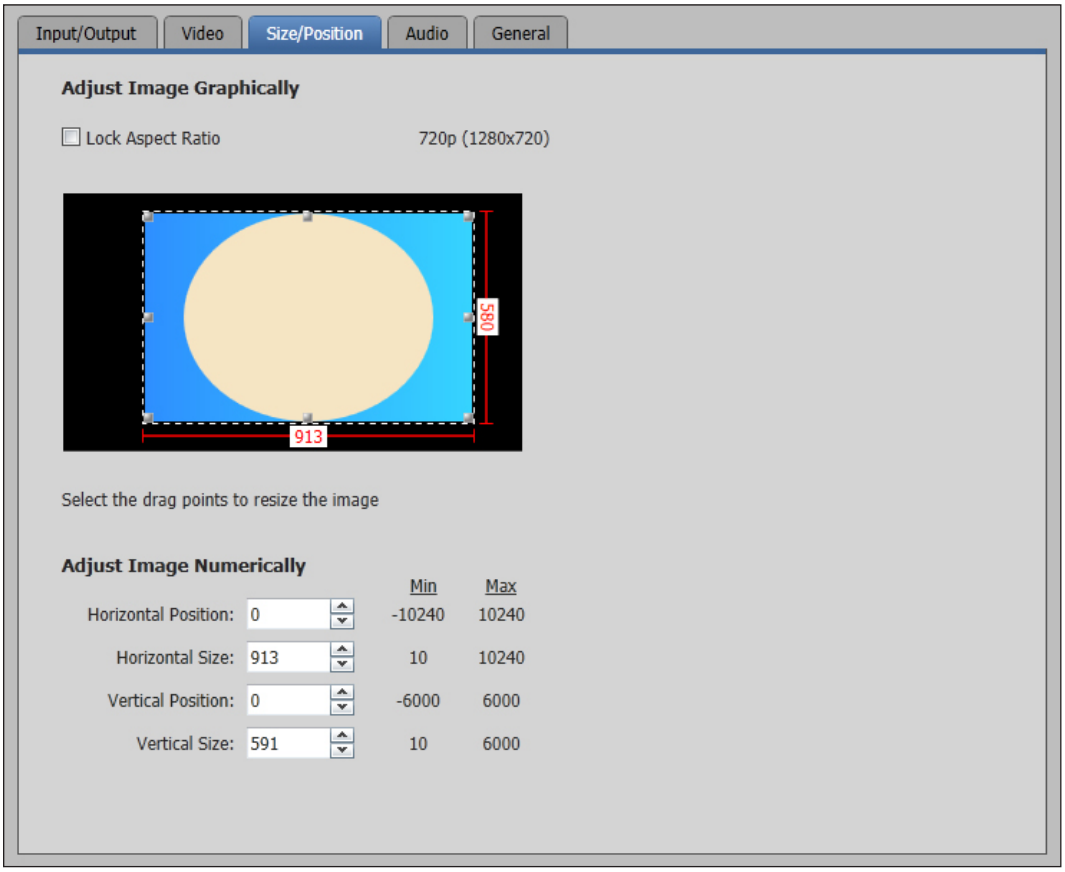


Figure 29. Size/Position Tab

To adjust the size and position graphically:

If desired, click the **Lock Aspect Ratio** check box to constrain proportions.

1. Click and drag the drag points of the sample image in the Preview box to resize the image within the designated space (defined by the black area in figure 29 above).
2. Click anywhere inside the sample image and drag it anywhere within the Preview box.

To adjust the size and position numerically:

1. Enter a value or click the **Up** and **Down** arrows in the **Horizontal Size** and **Vertical Size** fields.
2. Enter a value or click the **Up** and **Down** arrows in the **Horizontal Position** and **Vertical Position** fields.

Audio tab

Click the **Audio** tab to open the Audio screen. This screen contains audio output settings.

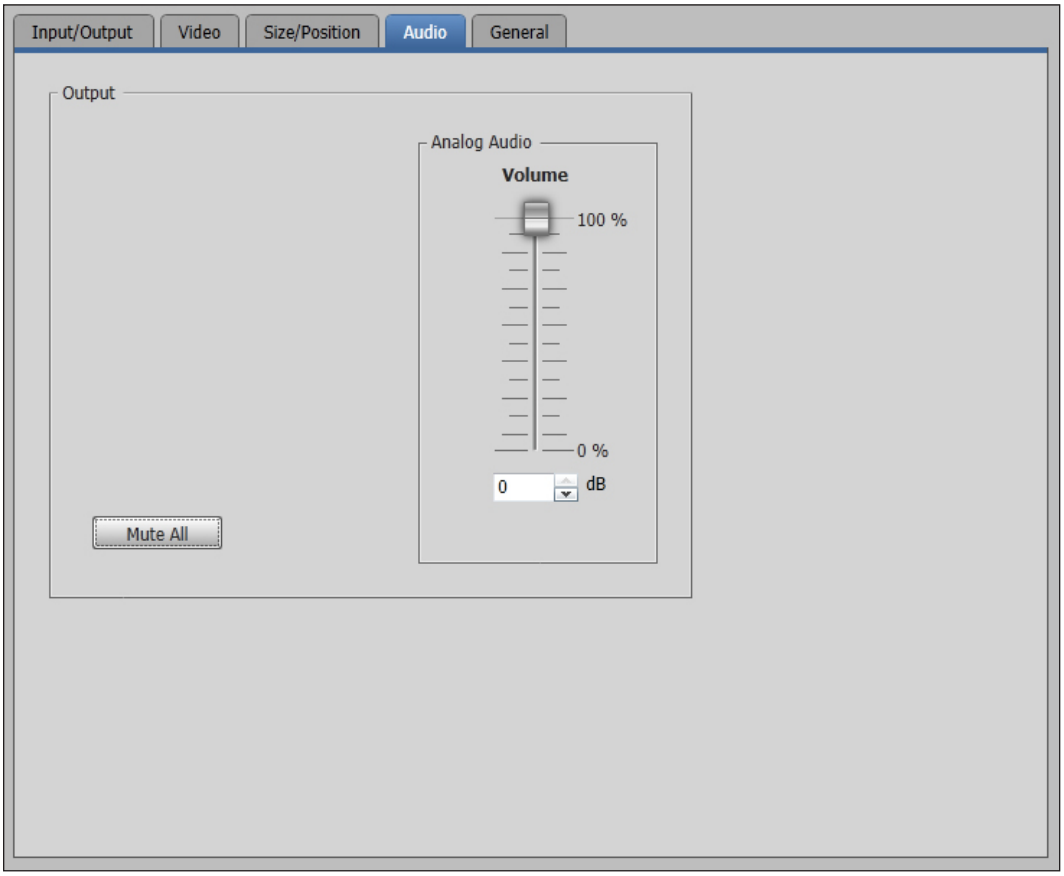


Figure 30. Audio Tab

Output panel

The Output panel is used to mute or unmute all audio output and control volume on the analog audio output.

Mute all — Click the **Mute All** button to mute or unmute all audio output. When muted, the button turns red.

Volume slider — Click and drag the handle of the **Volume** slider, enter a value in the **Volume** field, or click the **Up** and **Down** arrows to adjust analog audio output volume.

General Tab

Click the **General** tab to open the General screen. This screen contains executive mode and video and sync settings.

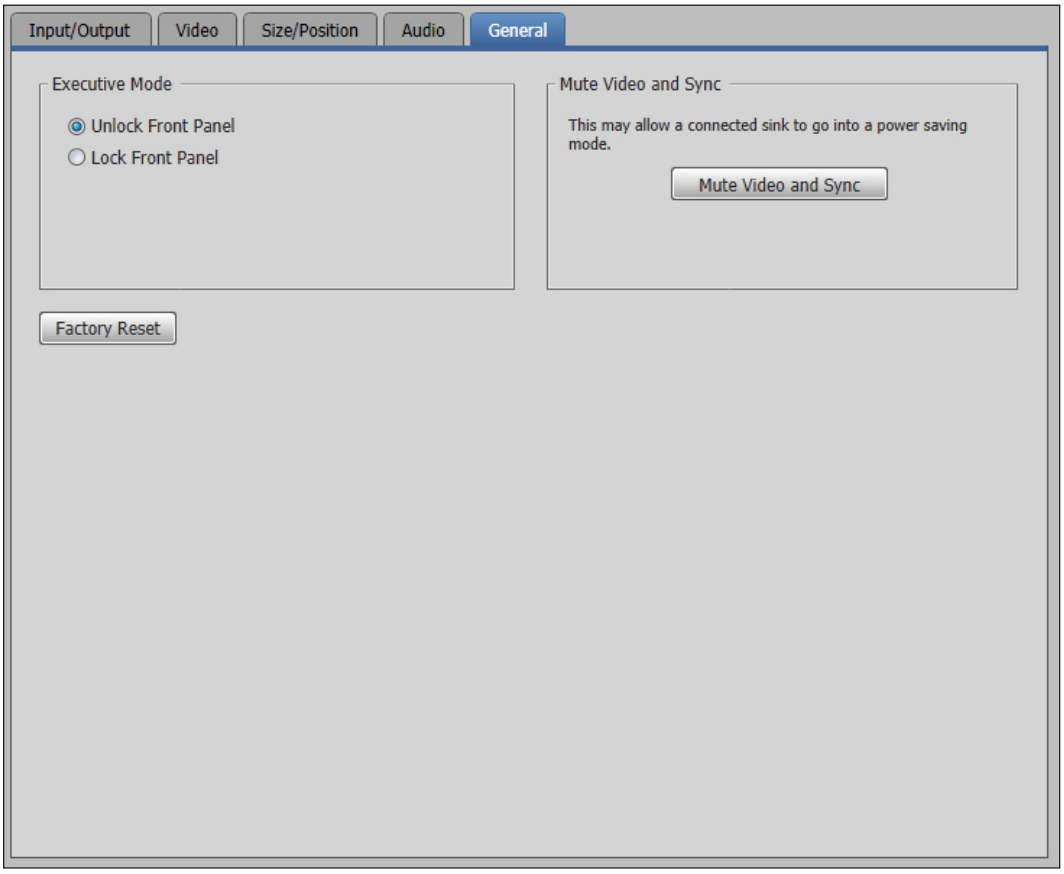


Figure 31. General Tab

Executive Mode panel

The Executive Mode panel is used to enable or disable front panel lockout mode (executive mode).

Unlock front panel — Click the **Unlock Front Panel** radio button (default) to disable executive mode and allow full use of the receiver front panel.

Lock front panel — Click the **Lock Front Panel** radio button to enable executive mode and lock the front panel.

NOTE: In executive mode, access to the OSD menu is disabled.

Mute Video and Sync panel

The Mute Video and Sync panel is used to mute or unmute output video and sync.

Mute video and sync — Click the **Mute Video and Sync** button to mute the active video and disable sync on the output.

Factory Reset

Click the **Factory Reset** button to reset the receiver to factory settings (except for firmware).

NOTE: This is the same as the Esc ZXXX SIS command (see **Reset SIS commands** on page 28).

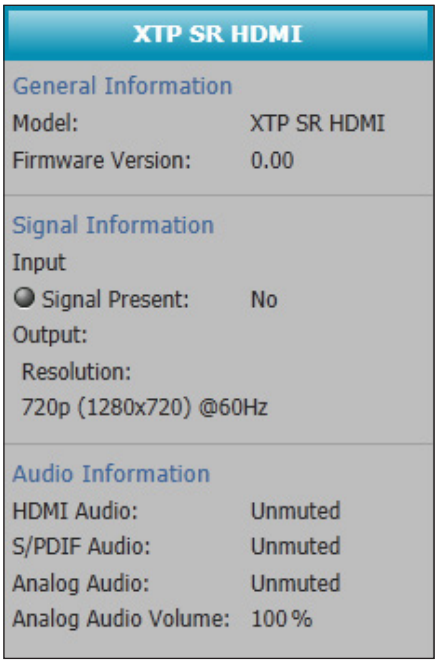
Device Information panel

The Device Information panel displays device information and signal status information.

General Information section

Model — Displays the device model.

Firmware Version — Displays the firmware version.



Signal Information section

Input Signal Present — Displays the signal presence. The indicator to the left turns green when there is an input signal present.

Output Resolution — Displays the output resolution and refresh rate.

Audio Information section

HDMI Audio — Displays the mute status of the HDMI audio output.

S/PDIF Audio — Displays the mute status of the audio on the S/PDIF output.

Analog Audio — Displays the mute status of the analog audio outout.

Analog Audio Volume — Displays the analog audio output volume level.

Reference Information

This section contains mounting information and updating firmware methods. Topics in this section include:

- **Mounting**
- **Updating Firmware with Firmware Loader**

Mounting

The XTP SR HDMI can be placed on a tabletop or mounted in a rack or underneath a desk.

Tabletop Mounting

Attach the provided rubber feet to the bottom four corners of the enclosure.

Mounting Kits

Mount the unit using any optional compatible rack shelf or mounting kit listed on the Extron website (**www.extron.com**), in accordance with the directions included with the kit. For rack-mounting, see **UL guidelines for rack-mounted devices** below.

UL guidelines for rack-mounted devices

The following Underwriters Laboratories (UL) guidelines pertain to the safe installation of the XTP SR HDMI in a rack.

1. **Elevated operating ambient temperature** — If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient temperature, Therefore, install the XTP SR HDMI in an environment compatible with the maximum ambient temperature (Tma = +122 ˚F, +50 ˚C) specified by Extron.
2. **Reduced air flow** — Install the equipment in a rack so that the amount of air flow required for safe operation of the equipment is not compromised.
3. **Mechanical loading** — Mount the equipment in the rack so that a hazardous condition is not achieved due to uneven mechanical loading.
4. **Circuit overloading** — Connect the equipment to the supply circuit and consider the effect that circuit overloading might have an overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
5. **Reliable earthing (grounding)** — Maintain reliable grounding of rack-mounted equipment. Pay particular attention to supply connections other than direct connections to the branch circuit (for example, the use of power strips).

Updating Firmware with Firmware Loader

To upload and update firmware for the XTP SR HDMI, download the new firmware to a connected computer and upload the firmware with the Extron Firmware Loader utility.

Downloading Extron Firmware Loader

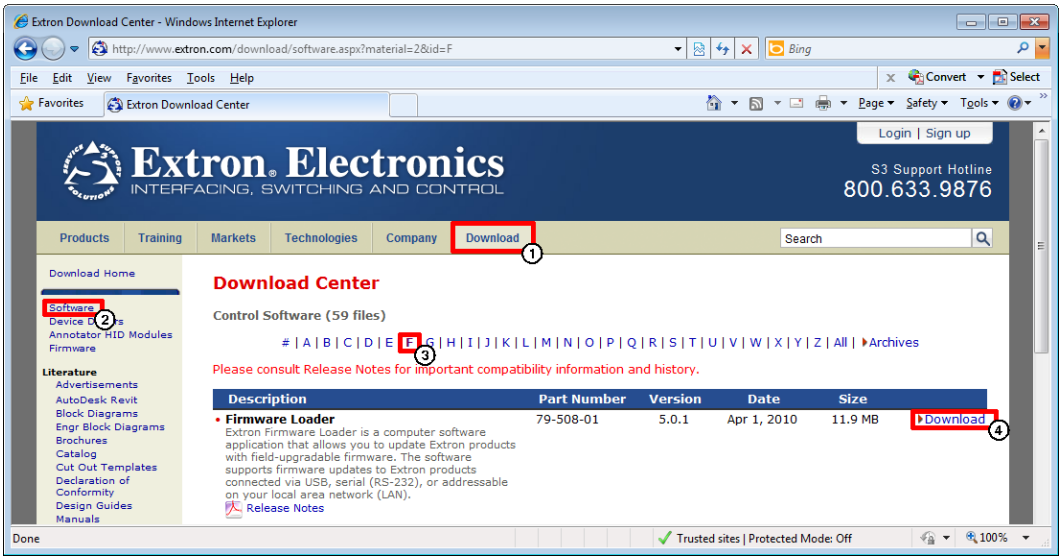


Figure 32. Firmware Loader on the Extron Website

1. On the Extron website, **www.extron.com**, click the **Download** tab.
2. From the left sidebar, click the **Software** link.
3. Navigate to Firmware Loader.
4. Click the **Download** link on the right that corresponds with the program.
5. Submit any required information to start the download.

Installing Firmware Loader

1. Once Firmware Loader has been downloaded, run the .exe file from the save location. The installation wizard window opens.
2. Follow the instructions on the Installation Wizard screens to install the new firmware on the computer. A Release Notes file is provided for information on what has changed in the new firmware version and instructions for updating the firmware.

Downloading Firmware

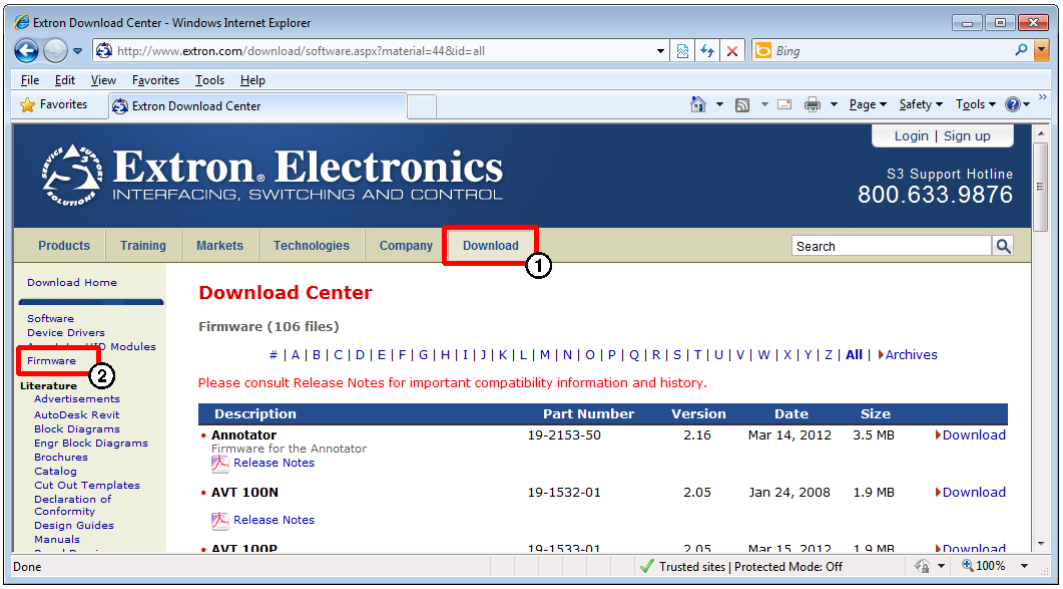


Figure 33. Downloading Firmware from the Extron Website

1. On the Extron website, **www.extron.com**, click the **Download** tab.
2. From the left sidebar, click the **Firmware** link.
3. Navigate to XTP SR HDMI.
4. Ensure the available firmware version is a later version than the current one on the device.

   NOTE: The firmware release notes are a PDF file that provides details about the changes between different firmware versions. The file can be downloaded from the same page as the firmware.

5. Click the **Download** link to the right of the desired device.
6. Submit any required information to start the download. Note where the file is saved.
7. Open the executable (.exe) file.
8. Follow the instructions on the Installation Wizard screens to install the new firmware on the computer. A Release Notes file is provided for information on what has changed in the new firmware version and instructions for updating the firmware.

Installing Firmware

1. Open Firmware Loader and establish a connection between the computer and the device. The Add Device... dialog box opens.

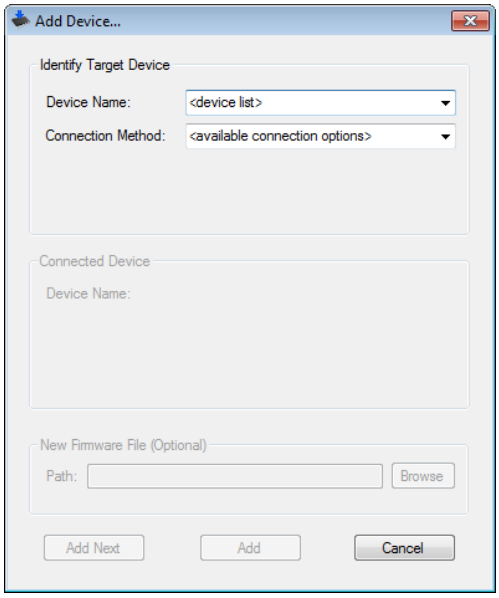


Figure 34. Add Device... Dialog Box

2. Select XTP SR HDMI from the **Device Name** drop-down list.
3. Select the method of connection from the **Connection Method** drop-down list.
4. Depending on the connection method, additional options appear. Make the appropriate selections for the current connection method.
5. Click **Connect**.
6. Click **Browse** in the New File Firmware (Optional) section.
7. In the Open dialog box, navigate to the location of the new firmware file, select the desired file, and click **Open**.

ATTENTION: Valid firmware files must have the file extension .S19. A file with any other extension is not a firmware upgrade for this device and could cause the device to stop functioning.

8. Click **Add**. The Add Device... dialog box closes and the device and firmware are listed in the Firmware Loader main window.
9. Click **Begin** to start the upload process.
10. Close Firmware Loader when the **Remaining Time** field shows **00.00.00**, the **Progress** column shows **100%**, and the **Status** field shows **completed**

Extron Warranty

Extron Electronics warrants this product against defects in materials and workmanship for a period of three years from the date of purchase. In the event of malfunction during the warranty period attributable directly to faulty workmanship and/or materials, Extron Electronics will, at its option, repair or replace said products or components, to whatever extent it shall deem necessary to restore said product to proper operating condition, provided that it is returned within the warranty period, with proof of purchase and description of malfunction to:

USA, Canada, South America, and Central America:
Extron Electronics
1230 South Lewis Street
Anaheim, CA 92805
U.S.A.

Japan:
Extron Electronics, Japan
Kyodo Building, 16 Ichibancho
Chiyoda-ku, Tokyo 102-0082
Japan

Europe and Africa:
Extron Europe
Hanzeboulevard 10
3825 PH Amersfoort
The Netherlands

China:
Extron China
686 Ronghua Road
Songjiang District
Shanghai 201611
China

Asia:
Extron Asia Pte Ltd
135 Joo Seng Road, #04-01
PM Industrial Bldg.
Singapore 368363
Singapore

Middle East:
Extron Middle East
Dubai Airport Free Zone
F12, PO Box 293666
United Arab Emirates, Dubai

This Limited Warranty does not apply if the fault has been caused by misuse, improper handling care, electrical or mechanical abuse, abnormal operating conditions, or if modifications were made to the product that were not authorized by Extron.

NOTE: If a product is defective, please call Extron and ask for an Application Engineer to receive an RA (Return Authorization) number. This will begin the repair process.

USA: 714.491.1500 or 800.633.9876 **Europe**: 31.33.453.4040
Asia: 65.6383.4400 **Japan**: 81.3.3511.7655

Units must be returned insured, with shipping charges prepaid. If not insured, you assume the risk of loss or damage during shipment. Returned units must include the serial number and a description of the problem, as well as the name of the person to contact in case there are any questions.

Extron Electronics makes no further warranties either expressed or implied with respect to the product and its quality, performance, merchantability, or fitness for any particular use. In no event will Extron Electronics be liable for direct, indirect, or consequential damages resulting from any defect in this product even if Extron Electronics has been advised of such damage.

Please note that laws vary from state to state and country to country, and that some provisions of this warranty may not apply to you.

Extron Headquarters	Extron Europe	Extron Asia	Extron Japan	Extron China	Extron Middle East	Extron Korea	Extron India
+1.800.633.9876 (Inside USA/Canada Only) Extron USA - West: +1.714.491.1500, +1.714.491.1517 FAX Extron USA - East: +1.919.850.1000, +1.919.850.1001 FAX	+800.3987.6673 (Inside Europe Only) +31.33.453.4040 +31.33.453.4050 FAX	+65.6383.4400 +65.6383.4664 FAX	+81.3.3511.7655 +81.3.3511.7656 FAX	+86.21.3760.1568 +86.21.3760.1566 FAX	+971.4.299.1800 +971.4.299.1880 FAX	+82.2.3444.1571 +82.2.3444.1575 FAX	1800.3070.3777 Inside India Only +91.80.3055.3777 +91.80.3055.3737 FAX

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